

## CLAIMS:

1. An apparatus having means for segmenting a series of 2D or 3D images obtained of a patient's organ or other body part, wherein a first segmentation is carried out on a first image of the series of images and wherein the first segmentation is used for the subsequent segmentation of the remainder of images of said series of images, **characterized** in that in relation to the images said means carry out a series of transformations wherein each separate transformation embodies a fitting operation between two images of said series of images, and wherein substantially all images of the series of images are subjected to such a transformation, and wherein the first segmentation on the first image of the series of images is modified and subsequently applied to any further image of the series of images according to the transformation or sequence of transformations that fits the said first image to said further image of the series of images.
2. An apparatus according to claim 1, **characterized** in that each transformation relates to adjacent or immediately successive images of the series of images.
3. An apparatus according to claim 1, **characterized** in that there are two or more series of images and that the segmentation of a first series of images is applied to all series of images.
4. An apparatus according to claim 3, **characterized** in that the respective series of images are collected with different means of monitoring selected from the group MR, CT, NM and US.
5. An apparatus according to claim 3 or 4, **characterized** in that the respective series of images are collected at different times.
6. An apparatus according to any one of claims 1-5, wherein the images relate to a substantially sphere-like organ such as a heart, **characterized** in that prior to establishing the said series of transformations, the series of images are converted to a modified series of

images showing the walls of the organ in a flat plane wherein the left and right part of said plane substantially correspond to the inside and outside of said organ, and that the said series of transformations are applied to the modified series of images.

- 5     7.             Software for an apparatus arranged for segmenting a series of 2D or 3D images obtained of a patient's organ or other body part, wherein a first segmentation is carried out on a first image of the series of images and wherein the first segmentation is used for the subsequent segmentation of the remainder of images of said series of images, **characterized** in that in relation to the images a series of transformations are established
- 10   wherein each separate transformation embodies a fitting operation between two images of said series of images, and wherein substantially all images of the series of images are subjected to such a transformation, and wherein the first segmentation on the first image of the series of images is modified and subsequently applied to any further image of the series of images according to the transformation or sequence of transformations that fits the said
- 15   first image to said further image of the series of images.
8.             Software according to claim 7, **characterized** in that each transformation relates to adjacent or immediately successive images of the series of images.
- 20   9.             Software according to claim 7, **characterized** in that there are two or more series of images and that the segmentation of a first series of images is applied to all series of images.
10.            Software according to any one of claims 7-9, wherein the images relate to a
- 25   substantially sphere-like organ such as a heart, **characterized** in that prior to establishing the said series of transformations, the series of images are converted to a modified series of images showing the walls of the organ in a flat plane wherein the left and right part of said plane substantially correspond to the inside and outside of said organ, and that the said series of transformations are applied to the modified series of images.
- 30   11.            A method for segmenting a series of 2D or 3D images obtained of a patient's organ or other body part, wherein a first segmentation is carried out on a first image of the series of images and wherein the first segmentation is used for the subsequent segmentation of the remainder of images of said series of images, **characterized** in that in relation to the

images a series of transformations are established wherein each separate transformation embodies a fitting operation between two images of said series of images, and wherein substantially all images of the series of images are subjected to such a transformation, and that the first segmentation on the first image of the series of images is modified and  
5 subsequently applied to any further image of the series of images according to the transformation or sequence of transformations that fits the said first image to said further image of the series of images.

12. A method according to claim 11, **characterized** in that each transformation  
10 relates to adjacent or immediately successive images of the series of images.

13. A method according to claim 11, **characterized** in that there are two or more series of images and that the segmentation of a first series of images is applied to all series of  
15 images.

14. A method according to claim 13, **characterized** in that the respective series of images are collected with different means of monitoring selected from the group MR, CT, NM and US.

15. A method according to claim 13 or 14, **characterized** in that the respective series of images are collected at different times.

16. A method according to any one of claims 11-15, wherein the images relate to a substantially sphere-like organ such as a heart, **characterized** in that prior to establishing the  
25 said series of transformations, the series of images are converted to a modified series of images showing the walls of the organ in a flat plane wherein the left and right part of said plane substantially correspond to the inside and outside of said organ, and that the said series of transformations are applied to the modified series of images.